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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,739	03/09/2004	William L. Bowden	08935-251002	2499

26161 7590 09/29/2005

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EXAMINER

WEINER, LAURA S

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 09/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/796,739

Applicant(s)

BOWDEN ET AL.

Examiner

Laura S. Weiner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24-38 and 40-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 24-38, 40-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7-22-05 8-29-05

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8-29-05 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 24-38, 40-44 has been considered but is moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3. Claims 24-38, 40-42 are rejected under 35 U.S.C. 102(a) as being anticipated by Read et al. "Low Temperature Performance of Lambda-Manganese Oxide in Lithium Primary Batteries".

Read et al. teaches a lithium primary battery comprising a lambda-manganese dioxide cathode and a lithium anode having a higher energy density than conventional heat-treated B/gamma-MnO₂ in primary lithium batteries over the temperature range of -40 degrees C to 40 degrees C and discharge rates from 0.1 to 2.0 mA/cm². The improvement resulted from the increased voltage and improved discharge kinetics on

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the 4V plateau of $\lambda\text{-MnO}_2$. Read et al. teaches in Figure 1, that the cell has a closed circuit voltage of about 4V and a specific discharge capacity at a normal discharge rate of 1 mA/cm² to a 3V cutoff of 125 mAh/g. Read et al. teaches in the Experimental section, that $\lambda\text{-MnO}_2$ was prepared by placing 1.2 kg of LiMn_2O_4 spinel in a container with distilled water. 6.0 Molar H_2SO_4 (acid) was added until the pH stabilized at 0.7 ± 0.1 . The resulting solid was filtered and washed with distilled water until the rinse water came out neutral. The solid was dried in air. The single point BET surface area was 7 m²/g. Read et al. teaches the exact same claimed method steps, teaching that the acid is sulfuric acid, that the pH is 0.7 or less, the acid has a concentration of 1-8 molar and teaches using the exact same starting $\text{Li}_{1+x}\text{Mn}_{2-x}\text{O}_4$ [LiMn_2O_4 where $x=0$], therefore, the process is identical to the claimed method steps. There is nothing on record to show the differences between the claimed method and the method taught by Read et al.

Claim Rejections - 35 USC § 103

4. Claim 44 is rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Read et al. "Low Temperature Performance of Lambda-Manganese Oxide in Lithium Primary Batteries".

Read et al. teaches in Figure 1, that the cell has a closed circuit voltage of about 4V and a specific discharge capacity at a normal discharge rate of 1 mA/cm² to a 3V cutoff of 125 mAh/g. Read et al. teaches that $\lambda\text{-MnO}_2$ was prepared by placing 1.2 kg of LiMn_2O_4 in a container with distilled water. 6.0 Molar H_2SO_4 (acid) was

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added until the pH stabilized at 0.7 ± 0.1 . The resulting solid was filtered and washed with distilled water until the rinse water came out neutral. The solid was dried in air.

The single point BET surface area was 7 m²/g.

Since Read et al. teaches making the positive electrode the same way using the same compound, water and acid then inherently the same positive electrode including lamda-MnO₂ having a total pore volume from 0.05-0.15cm³/g must also be obtained. In addition, the presently claimed property of a positive electrode including lamda-MnO₂ having a total pore volume from 0.05-0.15cm³/g would have obviously have been present once the Read et al. product is provided. *In re Best*, 195 USPQ 433 (CCPA 1977).

5. Claims 24-38, 40-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Read et al. "Low Temperature Performance of Lambda-Manganese Oxide in Lithium Primary Batteries".

Read et al. teaches the exact same claimed method steps, teaching that the acid is sulfuric acid, that the pH is 0.7 or less, the acid has a concentration of 1-8 molar and teaches using the exact same starting Li_{1+x}Mn_{2-x}O₄ [LiMn₂O₄ where x=0], therefore, the process is identical to the claimed method steps. There is nothing on record to show the differences between the claimed method and the method taught by Read et al. There is nothing on the record to explain how the same method steps using the same starting materials can give different properties.

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Read et al. discloses the claimed invention as explained above except does not teach that the λ -MnO₂ has a BET surface area of greater than 8 m²/g, teaches instead 7 m²/g, or that the specific discharge capacity is 130, 135 or 140 mAh/g or greater instead teaches around 125 mAh/g.

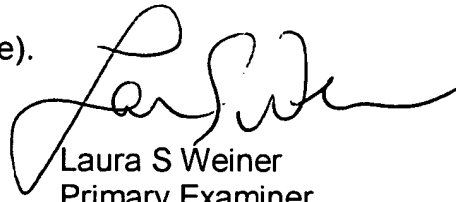
It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a λ -MnO₂ having a BET surface area greater than 8 m²/g or design the cell to have a specific discharge capacity greater than 140 mAh/g since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura S. Weiner whose telephone number is 571-272-1294. The examiner can normally be reached on M-F (6:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Laura S Weiner
Primary Examiner
Art Unit 1745

September 26, 2005